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Modern Concepts of Cardiovascular Disease

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THE CARDIAC IN INDUSTRY

Owing to the results of the World War, organization for training the handicapped and placing them in industry of necessity has progressed much more rapidly in Europe than in this country. In most European countries, during the past twenty years, it has become a national obligation. In Germany they have gone so far as to regulate legally the training and placing of the handicapped, demanding that 2 per cent of all positions in various industries must be filled with individuals at least 50 per cent disabled. I first became interested in this problem while working in England during the years 1919 and 1920. One day at luncheon, Sir Thomas Lewis remarked that "in the ideal state, no position in industry which might be filled by a person handicapped with cardiovascular disease should be filled with an entirely healthy individual." This, of course, is a strong statement but is certainly worthy of careful consideration.

The greatest difficulty in planning for the training and placement of those handicapped with cardiovascular disease, is the fear in the minds of the employers as to the result of the workmen's compensation act and the possibilities, if cardiac patients are given work and later break down in their employ. It is notoriously difficult to state positively that almost any occupation may not have contributed in some slight degree to the progression of the cardiovascular lesion that has finally ended in heart failure or sudden death. Until there is some uniformity in the workmen's compensation act in the various states and some uniformity in the interpretation of the act by the various referees and courts, it will be a difficult matter to persuade employers to accept individuals handicapped by cardiovascular disease.

During the past twenty years the medical profession has learned that, in spite of valvular disease, many individuals can perform the average type of work without materially impairing their health or shortening their lives. We know today that unless an individual is in a state of borderline cardiac failure, moderate physical effort appears to play little part in the progression of the disease or in the production of congestive heart failure. Certainly sedentary occupations, even if they may demand unusual mental concentration or nervous and muscular coordination do not seem to hurt the average patient with rheumatic valvular heart disease unless hypertension is present. In cases of hypertension or of coronary insufficiency, of course, it is a different story, but even here, many individuals even though they may have had a cardiac infarct can carry on sedentary occupations which do not entail much mental concentration, nervous tension or physical effort. Too often physicians advise patients with coronary insufficiency with or without hypertension or healed cardiac infarcts, to give up a lucrative position in which the patient might have carried on for many years upon a restricted mental and physical daily routine.

The placement of cardiac patients in suitable employment was carried on successfully from 1926 to 1932 by the Philadelphia Heart Association through a cooperative arrangement with the Philadelphia Health Council and Tuberculosis Committee.

During the seven years from 1926 through 1932 a total of 280 heart patients were placed in employment, some of them more than once, so that a total of 388 jobs were filled by these patients. During the first three years of this service, no effort was made to ascertain the amount earned by the cardiac patients who were placed. But from the years 1929 to 1932 the earnings of heart patients placed by the service amounted to upwards of $90,000.

The applicants for placement were referred from the twenty-one heart clinics of Philadelphia and by private physicians. Each applicant had a medical examination and a diagnosis card filled out by the referring physician. The diagnosis included etiologic, anatomic and physiologic factors, a functional classification and an indication of the work tolerance of the applicant in terms of the activities he would normally undertake. In addition to this report, each applicant was studied individually by the social service worker in charge of this placement service, as to his employment history, his mental attitude and his abilities as a worker. Each presented an individual problem.

Finding employment for the applicants required persistent interviewing of employers. All sections of the city were included so as to place the applicants in work near their homes and reduce travel if possible. In order to get an idea of safe jobs in factories, as well as of the physical conditions existing in the plant, visits were made to various parts of the plants.

Few employers desire persons below par physically even for the simplest jobs. All placement work of handicapped persons requires persistent solicitation of the employers. They must be told that persons whose physical condition has been determined by an examination can be placed in suitable work and prove to be a definite asset. It is pointed out also that physically handicapped workers, when properly placed, are usually permanent and faithful, since they appreciate having a job. The fact that a continuous follow-up after placement is stressed which insures that the worker will not be allowed to remain on the job unless he can safely do so, is pointed out. Often after a handicapped person has been placed and proves to be a successful worker, calls are made for another handicapped worker.

During the years 1934 and 1935, Mr. F. W. Steuber, working for the Philadelphia Branch of the Pennsylvania State Bureau of Rehabilitation made a study of the employment possibilities for the physically handicapped in Philadelphia industry. In the persuance of this study, 40,000 workers have been more or less directly observed in the performance of 1,000 different operations in twenty-five industries. The data gathered during the study of these operations from the standpoint of performance of the specifically handicapped has been tabulated on the basis of possibilities per thousand workers in

Table 1. Vocational Possibilities for Heart Patients

Skilled Labor

Woodwork
- a. Cabinet making
- b. Novelty - small toys, jig-saw puzzles, bag tops, small frames

Textiles
- a. Chemistry
- b. Weaving
- c. Designing

Commercial Work
- a. Stenography and typewriting
- b. Filing and indexing
- c. Telephone operator

Handiwork
- a. Basketry and caning
- b. Fine sewing
- c. Quilting
- d. Hooked rug making
- e. Leather art
- f. Monograming
- g. Embroidery

Jewelry
- a. Polishing
- b. Engraving
- c. Filing
- d. Soldering
- e. Carding

Electrical Construction
- a. Wiring signs
- b. Radio work
- c. Assembling electric cords, and the like

Mechanical drafting
- a. Making and filing blue prints
- b. Architectural planning

Commercial art
- a. Advertising
- b. Poster making

Designing
- a. Jewelry
- b. Clothes
- c. Wallpaper, linoleum

Vocational music
- a. Playing an instrument
- b. Teaching an instrument

Librarian (no lifting of heavy books)

Dressmaking

Millinery

Hairdressing

Tailoring

Shoe Cobbling

Necktie cutting

Unskilled Labor

Factory work
- a. Packing and dressing dolls, painting faces, making dolls' clothes
- b. Lining trays and drawers, riveting small parts in trunk factory
- c. Stripping and packing tobacco
- d. Finishing, running ribbons, packing in garment factory
- e. Packing in any factory where objects handled are not heavy

Errand boy

Office boy
- a. Stamping
- b. Labeling
- c. Sorting slips
- d. Folding posters

Clerical work, filing

Kitchen work in hotels

each industry. For the cardiac classification, the data are given in Table 2.

Table 2. Possibilities for Employment of Cardiac Patients in Philadelphia Industry

Industry	Probable Number Per 1,000	Normal Employment	Number of Cardiac Patients Employable in Normal Times
Storage battery manufacturing	56	4,500	252
Radio set manufacturing	697	13,200	9,200
Hat and cap manufacturing	—	8,000	—
Glass manufacturing and processing	144	1,200	173
Milk distribution	28	4,000	112
Ball bearing manufacturing	164	1,400	230
Knit goods manufacturing	245	6,000	1,470
Hosiery manufacturing	230	18,000	4,140
Garage service	680	5,000	3,400
Machine tool manufacturing	435	2,000	870
Printing and publishing	—	12,000	—
Drug manufacturing	678	1,000	678
Paper manufacturing	—	1,000	—
Recording instrument manufacturing	846	1,500	1,269
Leather tanning and dyeing	—	3,500	—
Gear manufacturing	268	500	134
Mail order industry	248	3,000	744
Cigarette and cigar manufacturing	1	6,100	6
Paint manufacturing	—	2,000	—
Sugar refining	392	1,100	431
Shoe manufacturing	153	3,500	536
Bakery industry	322	6,000	1,932
Confectionery manufacturing	506	3,200	1,619
Sporting goods manufacturing	946	600	568
Laundry industry	—	5,000	—
		113,300	27,764

The large variations among the industries reflect primarily the difference in the character of the work. In some cases, notably hat and cap manufacturing, the influence of a strict medical examination of employees is paramount.

Conclusions

1. It seems questionable whether physical effort is responsible for the production of cardiovascular disease or plays as large a part in the progression of cardiovascular disease as has been previously believed. If this is true, the training of cardiac patients and their placement in industry constitute as great a responsibility for the physician as any other form of therapeutics — in fact in Class 1 and 2A cases, a much more important responsibility than medication or other forms of therapy.

2. With proper functional classification by private physicians or physicians in heart clinics, with especially trained placement workers in city and state rehabilitation bureaus, cardiac patients in much larger numbers than previously recognized, may earn a living through training in sheltered work shops with ultimate placement in industry, or, if previously trained, through direct placement in industry.

3. If common labor is divided into two classes, namely light labor and heavy labor, almost 100 per cent of cardiac patients, except those in Class 3, are employable at light labor.

4. To accomplish such rehabilitation and placements, it is necessary to obtain the interest of the medical profession and to impress physicians with their responsibility toward the handicapped, and the necessity of cooperating with the social service workers, especially trained placement workers and city, state and county rehabilitation bureaus. Finally, and perhaps most important of all, is the sympathetic handling of the unfortunate individual handicapped by cardiovascular disease.

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